

**SURVEY OF BUSINESS MANAGEMENT
FACTORS ASSOCIATED WITH MIXED
ANIMAL VETERINARY PRACTICE SIZE
AND GROWTH**

by

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ABSTRACT

Recent literature regarding potential shortages of food animal veterinarians has sparked interest in how to improve economic sustainability in this profession. Business management practices influence profitability, but relatively little work has been done evaluating the impact specific practices have on mixed animal veterinary practice growth. The objectives of this research were to determine potential associations between practice management factors and both practice size and practice growth measured over a 5-year period. Results from a cross sectional survey of mixed animal veterinary practitioners (n=54) were analyzed to address these research objectives. Survey participants had practiced a mean of 19.6 years and most (85%) practiced in towns with populations of less than 25,000. Practice size was measured by the 5-year average of number of veterinarians (NV), gross practice income (GPI), and gross income per veterinarian (GPIV). Positive associations were identified among all three measures, and active client communication was associated with higher GPI. Practices employing a business manager were associated with increased GPI and GPIV. Practice growth was measured by the mean percent change in number of veterinarians (NVG), percent growth in income per veterinarian (DVMG), and percent growth in gross income (GRSG). Practice size variables indicate influences of business management practices on the size of veterinary practices while practice growth variables indicate whether the practice has changed in size and how business management practices are associated with those changes. On average, practices exhibited positive growth in NVG (4.4%), DVMG (8.1%) and GRSG (8.5%) during the study period, but the growth rate was highly variable among practices. Practices with a marketing plan exhibited a higher DVMG, while frequency of adjusting prices and pricing structures were associated with higher GRSG. Results from this study provide insight into the associations between specific management techniques and veterinary practice size and growth rate.

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CHAPTER I: INTRODUCTION AND LITERATURE REVIEW

1.1 Introduction

Improving the income of practicing veterinarians has been a topic of discussion for some time. There is a constant increasing of costs in the economy and if actions are not taken to improve the income of veterinarians, their financial positions will suffer. In addition, research has shown that veterinarians are not taking advantage of good business management practices, which results in a loss of potential income (Cron et al., 2000).

Recently, a potential shortage of food animal veterinarians has sparked interest in the economic sustainability of rural veterinary practices. The roles of veterinarians in rural areas are becoming more important because of their responsibilities in safeguarding our food supply from potential threats. As our food supply becomes more globalized, food safety and security become a critical need. Hoblet et al. (2003) explains that food animal veterinarians have been identified as those best suited to address these challenges.

Some research has been conducted regarding business management practices to improve practicing veterinarian's income. This study focuses on business management practices that are associated with economic growth of mixed animal practices. The objectives of this project were to determine potential differences in practice management and business statistics, to determine potential associations between practice management factors and practice size, and to determine potential associations between practice management factors and practice growth.

1.2 Overview

Recent literature regarding potential shortages of food animal veterinarians has sparked interest in how to improve economic sustainability of the food animal sector in the veterinary medical industry. Research has been conducted on business management practices that enhance practicing veterinarian's income. Veterinary colleges have also taken notice of the increasing importance of business management training knowledge and are making changes in order to meet that demand.

1.3 Shortage of food animal veterinarians

Concerns have been raised about a shortage of food animal veterinarians and the effect it will have on our nation's food supply (Syeed, 2007). An insufficient number of veterinarians to prevent disease outbreaks pose a threat to human health (Syeed, 2007). The U.S. food supply has become increasingly globalized which results in the need for amplified protection. The global demand for livestock products is expected to double within the first 20 years of the twenty-first century (Syeed, 2007). Critical national needs for food safety and security and animal health are rapidly increasing, and food animal veterinarians have been cited as a profession that can effectively address these challenges (Hoblet et al., 2003). Food animal veterinarians will play a crucial role in the agricultural industry's response to the increased demand for food production. Consequently, demand for food animal veterinarians is expected to increase by approximately 12-13% until 2016; however, research indicates a 4-5% shortage of food animal veterinarians each year (San Filippo, 2006; Prince et al., 2006).

The shortage of food animal veterinarians is due to the approximately 50% turnover of new veterinary graduates who enter food animal medicine then exit within five years, with most moving into companion animal practice (Hird et al., 2002). The demand of livestock products is increasing due to an increase in the consumption of dairy and meat products. This, in combination with a decrease in the number of food animal veterinarians, is taxing on the current system. As more and more livestock products are produced, the amount of support needed from food animal veterinarians will also most likely increase. Existing food animal veterinarians could be overwhelmed and the lack of qualified practitioners could affect the efficiency of livestock operations. To decrease the projected shortage, action needs to be taken to encourage more veterinary graduates to stay within food animal medicine for a longer period of time, or ideally, for the entirety of their veterinary careers. These findings tell us that there is a decreasing supply and increasing demand for food animal veterinarians. Furthermore, this indicates that improving the viability of food animal veterinary practices is extremely important to protecting our nation's food supply. Not addressing this issue increases the likelihood that the safety and security of our food supply will suffer if the number of practicing food animal veterinarians

is not adequate to keep up with the increase in demand of livestock products. Improving the economic viability of food animal veterinary practices is what will encourage practitioners to remain in this particular sector of the veterinary medical industry and will attract future veterinary graduates.

1.4 Business management practices within veterinary medicine

Business management practices of veterinarians have been studied in an effort to help increase income for practicing veterinarians. In 1998, the American Veterinary Medical Association commissioned Brakke Consulting to conduct a study concerning the business behaviors of small animal practitioners (Cron et al., 2000). The Brakke study examined 19 standard business practices and found that veterinarians often failed to take advantage of good management practices and as a result, decreased their potential income (Cron et al., 2000). This may indicate an insufficient amount of business education in the veterinary medical college curriculum (Bristol, 2002; Jaarsma et al., 2008). While the study focused on small animal veterinarians, the findings can still be applied to the business management practices of food animal veterinarians because of the similarities in the business requirements of successfully managing either type of practice.

The American Veterinary Medical Association-Pfizer study conducted in 2004 was designed to measure the effect of various business practices on income, to determine whether there is a difference in business practices between companion animal, equine, and food animal practices, and to determine if there were any changes in business practices identified by the 1998 Brakke study among companion animal veterinarians (Volk et al., 2005). The AVMA-Pfizer study examined 21 business practices and found these to be positively correlated with income (Volk et al., 2005). The eight practices which had the largest impact, and accounted for as much as 15% of the difference in income between respondents, were business orientation (using financial concepts to manage the practice), frequency of financial data review, employee development, negotiating skill, client loyalty, leadership (motivating others), client retention, and new-client development (Volk et al.,

2005). Similar to the Brakke study, results demonstrated that those who spent more time reviewing and understanding financial data had higher income (Volk et al., 2005).

There were also some interesting differences based on species-focus of veterinarians. While high mean household income of the practice area was very important to the incomes of equine and mixed animal veterinarians, it was not important at all to the incomes of food animal exclusive veterinarians (Volk et al., 2005). This finding was confirmed by the Brakke study on companion animal veterinarians which found that better socioeconomic status and larger community sizes were associated with higher practice income (Cron et al., 2000). These findings may differ by species focus because the mean household income in a rural area, which is where most food animal veterinarians are located, is generally lower than the areas where equine and mixed animal veterinarians practice (USDA ERS, 2003). Volk et al. (2005) also found that food animal veterinarians usually used fewer of the 19 standard business practices than companion animal or equine veterinarians (Volk et al., 2005). Food animal veterinarians were also less likely to review their financial performance compared to companion animal practitioners, however, there was also less of a relationship between business orientation and income in food animal practices. These results illustrate potential differences between drivers of practice income based on species focus of the practice.

According to the AVMA-Pfizer study there were three factors that stood out in terms of financial success regardless of species focus: good business and financial management, employee management, and client relations (Volk et al., 2005). Good business and financial management incorporates a variety of skills important to the practitioner. Miller et al. (2004) indicated that the ability to understand client accounts, sales tax, social security tax, interest and depreciation as well as comprehending overhead (in terms of solo practices vs. groups vs. partnerships) were among the top 15 practitioner-defined competencies required of food animal veterinary graduates.. The Brakke study also asked questions concerning management practices associated with veterinary practice as a service, and most respondents scored higher in this section than on the standard business practices sections (Cron et al., 2000). This indicates that veterinarians understand their

industry from a service perspective, but less so from a business perspective. Veterinarians who priced their services based on inherent values rather than being concerned about competitor's prices had a positive effect on income (Cron et al., 2000). This indicates that the value of services may be more important than competitors' prices when determining a schedule of charges for an individual practice.

The employee development section of the AVMA-Pfizer survey indicated that many practices do not use written job descriptions or conduct annual reviews of their employees (Volk et al., 2005). Employee development had one of the strongest relationships with income regardless of practice type or species focus. Competency of negotiation skills, often associated with business success, was also found to be positively correlated with income. Companion animal and food animal veterinarians showed similar levels of competency in this area. These findings indicate the importance of employee development to the financial success of a practice.

As veterinary medicine is primarily a service business, good client relations are key to a sustainable business. In the AVMA-Pfizer study, food animal veterinarians tended to score slightly lower than companion animal veterinarians in the area of client loyalty and client retention (Volk et al., 2005). This may be due to the fact that food animal veterinarians are treating animals whose owners typically are not emotionally attached to them; therefore owners are more concerned about economics than loyalty to a specific veterinarian. Companion animal veterinarians also scored higher than food animal veterinarians in new-client development (Volk et al., 2005). These findings indicate that there is room for improvement in food animal client relations.

In addition to the previously mentioned factors, ownership and gender were highly correlated with veterinarian income (Volk et al., 2005). Logically, a veterinarian who owns the practice will have higher income compared to an associate veterinarian. Two personal characteristics were highly correlated with income. High self-esteem and a low fear of negative evaluation had a positive relationship with income (Volk et al., 2005). This means that veterinarians with a high level of self-esteem (which are usually those with more years

of experience) and those who feel others perceive them to have a high level of competency, tend to have a higher income than those with low levels.

1.5 Business Practices within the Veterinary College Curriculum

It has become evident that the importance of business knowledge within veterinary medicine continues to increase. The lack of business skills in veterinary graduates has not gone unnoticed. Recently, many veterinary colleges have begun to make significant changes to supplement their graduates' veterinary educations with business-related courses. The Association of American Veterinary Medical Colleges surveyed their members and found that more than half had at least one required Veterinary Practice Management (VPM) course (Lloyd and Covert, 2001). This hardly seems adequate when considering the issues the Brakke (2000) and AVMA-Pfizer (2005) studies discovered. Iowa State University's College of Veterinary Medicine took a ground-breaking step and created an elective business systems curriculum that included courses such as "Management Pathways in Veterinary Medicine", "Accounting and Operations Management", and "Veterinary Entrepreneurship" (Draper and Uhlenhopp, 2002). These courses were created to provide students with essential business skills needed to succeed as practice owners (Draper and Uhlenhopp, 2002). Other colleges could increase course offerings as ways are discovered to improve business education in veterinary medicine.

1.6 Conclusions

Based on current trends, the potential exists for an upcoming shortage of food animal veterinarians. Several specific business management practices have been found to improve practicing veterinarian's income and veterinary colleges are making changes to augment business knowledge of graduates, both of which will hopefully increase the economic vitality of not only food animal practices, but all veterinary practices.

CHAPTER II: DATA ANALYSIS

2.1 Data

To address project objectives a cross-sectional survey was designed to determine potential associations between management factors and both practice size and business growth in rural veterinary practices. Our target audience was rural mixed animal veterinary practices. The survey was divided into three sections: demographics, economic practice characteristics, and current management practices. Demographic questions collected information on practice location, community type, number of employees in the practice, and practice species interest. Two series of questions were designed to elicit the amount of time practitioners spent on, or income generated by, different species. Responses were solicited by having practitioners respond with the percent of either income or time spent in one of five species categories: small animal/exotic, equine, beef, dairy, or swine. If answers from a series of questions, expected to sum to 100%, were not within 95% to 105%; the question was deemed incomplete and the answer from the responder discarded. If the sum of answers to this series of questions was between 95% to 100%, but not exactly 100%, a ratio was used based on the answers to adjust the final values to total 100% of time or income.

The practice economics portion of the survey requested data from the previous five years (2003 to 2007) regarding number of veterinarians in the practice and gross practice income. Practices with less than \$100,000 of gross income for more than one year of the study period were eliminated from the data set to optimize external validity of the findings. Survey responses with reported practice gross income less than \$100,000 could represent practices not devoted to full-time practice of veterinary medicine. In the section on current management practices, questions were asked regarding frequency of financial data analysis, method and frequency of updating prices, client pricing structures, utilization of business plans, frequency of consultant use, and methods of communication with clients. The final survey instrument (96 questions) was administered using a web-based questionnaire

entitled, “Practitioner Based Best Business Management Practices Survey” (Appendix A). The site used to administer the survey was Kansas State University’s Online Axio Survey System, a web-based survey creation tool.

In September 2008 e-mails were sent to veterinarians using three electronic list-serves: American Association of Bovine Practitioners (AABP, n=1943), Academy of Veterinary Consultants (AVC, n=500), and the Kansas State University College of Veterinary Medicine Continuing Education (n=967) inviting them to participate in the online survey. Potential study participants consisted of veterinarians with either an interest in bovine medicine (AABP and AVC list-serves), or veterinarians who had attended a previous Kansas State University Continuing Education conference (KSU list serve). A hyperlink to the survey form on the internet was provided in the e-mail, and participants submitted responses anonymously. Overall, 3,410 surveys were sent out to veterinarians.

The number of participants that began the survey was 162, with 75 completing, but only 57 finished the required gross income and number of veterinarians in the practice questions for all five study years (2003-2007). Three practices were removed from the dataset due to a gross income in more than one year below \$100,000. As a result, 54 practices were used in the dataset for analyses which yields a usable survey rate of 33% (54/162), while the overall survey response rate was 1.6% (54/3,410)

2.2 Practice Size and Growth Outcome Calculations

Three dependent variables were created to evaluate practice size using the survey data: the average number of veterinarians in the practice over the five-year study period (NV), mean gross practice income per veterinarian (GPIV), and gross practice income (GPI). Gross income per veterinarian was calculated by taking the gross income for each year divided by the number of veterinarians listed in the practice for that year to create a gross per veterinarian figure for each study year, which was then averaged to create GPIV. The number of reported veterinarians within each practice for each study year was averaged over the five study years to create NV. The five-year average gross practice income was used to calculate GPI.

The growth rate of practices was determined through the creation of three variables. Growth in the number of veterinarians (NVG) was calculated by calculating the annual growth rate in NV for adjacent study years, the average percent growth based on dollars per veterinarian (DVMG) was calculated using the GPIV for each practice from the five calendar years (2003 through 2007) included in the study. An annual percent growth was calculated for each adjacent two-year period, and then the average growth over the four two-year periods was calculated to generate the average percent business growth per veterinarian (DVMG). The average percent growth in practice gross income (GRSG) was determined by calculating annual growth for each adjacent two-year period (based on GPI), then averaging across the four two-year periods.

2.3 Statistical Analysis

The objectives of this study were to determine potential associations between the three practice size and three practice growth rate dependent variables described above (NV, GPI, GPIV, NVG, DVMG, GRSG) and independent variables, gathered from the survey. Bivariate analyses were run using a statistical program (JMP 7.0.1, SAS Institute Inc., Cary, NC). A bivariate analysis is a type of regression analysis. Studenmund (2006) describes a regression analysis to be, “a statistical technique that attempts to ‘explain’ movements in one variable, the dependent variable, as a function of movement in a set of other variables, called the independent (or explanatory) variables through the quantification of a single equation” (pg. 6). In this study, bivariate analyses consisted of several unique dependent variables (Y) with numerous other independent variables (X) gathered from a set of survey data. Outcomes with a p-value less than 0.05 were considered significant. Standard Deviations are reported for demographic variables, while Standard Errors were reported for comparisons. The standard deviation describes the distribution of the population, while standard errors were used for comparisons between sample means.

The data set included two types of variables: continuous and categorical. Continuous variables are those can take on any value in an interval, while categorical variables are those that can be divided into two or more groups. An example of a continuous variable in this study is gross income while an example of a categorical variable

is the answer to a “yes” or “no” question. Continuous variables were analyzed using a linear bivariate fit. Categorical variables were analyzed using a One-way ANOVA. A bivariate fit analysis determines how well data for X and Y demonstrate a linear relationship with each other. One-way ANOVA is used to determine the differences of the means among the two variables.

Often regression analyses involve many variables, but a bivariate analysis involves just two variables, the dependent and the independent variables. Bivariate analysis considers how the value of Y changes when the other variable, X, changes. It is important to note that although the study used bivariate analyses, the relationships between the two variables are rarely exact; however, the goal was to determine tendencies (Lindeman et al., 1980). This type of analysis was appropriate for this study because the objectives revolve around discovering associations between several practice management factors and the dependent variables of practice size and practice growth. It is important to remember that the goal of this project was to determine associations between variables as opposed to cause and effect relationships.

CHAPTER III: RESULTS

3.1 Introduction

The demographic portion of the survey identified information about the practice, the practitioner, and the species focus of the practice. Demographic data are summarized in Table 3.1. Survey participants were from 21 different states, with the most coming from the state of Kansas (13/54, 24%). Over half of the respondents were practicing in a town with a population of less than 5,000 (29/54, 54%) while 85% were practicing in towns with a population of less than 25,000 (Figure 3.1). The average (standard deviation – SD) practice radius was 50.0 miles (44.5) with an average (SD) of 4.9 (5.6) other food animal practices within a 30 mile radius. Practices had an average of 2.2 (1.4) veterinary technicians and 5.3 (3.9) lay help (secretarial, kennel staff, etc.).

Demographic analysis also included an examination of practitioner characteristics. Most (75%) survey respondents graduated before 1997, and respondents spent an average (SD) of 19.6 (10.4) years in practice at the time of survey completion. The majority (94.4%) of respondents were practice owners. Survey participants indicated they spent an average of 80.2% (13.2) of their time practicing veterinary medicine, 14.2% (9.4) of their time managing the practice, and 5.7% (7.3) of their time completing miscellaneous or “other” tasks. (See Table 3.1)

Practices in this survey worked on multiple species and the survey asked questions regarding both the percent of time spent and income generated by each species category. Respondents indicated that an average (SD) of 33.2% (24.6) of their time was devoted to small animal, 12.0% (15.6) to equine, 26.4% (25.4) to beef, 25.0% (31.8) to dairy, and 3.4% to swine (12.5) (Figure 3.2). However, respondents indicated that an average of 32.4% (25.3) of their income was derived from small animal, 10.9% (17.5) from equine, 27.7% (28.1) from beef, 25.1% (32.3) from dairy, and 4.1% (14.5) from swine. Practitioners were also asked to select the single species category that represented their practice’s primary area of interest. Only 20.4% of practices defined small animal as their

primary focus, while 35.2% were self-defined as beef and 35.2% listed dairy as their primary focus.

3.2 Practice Size Determined by the Number of Veterinarians (NV)

The average (SD) NV was 2.8 (1.9) veterinarians per practice over the 2003 to 2007 study period (Table 3.2). The analyses revealed several significant associations between practice management factors and practice size as judged by NV. (Table 3.3) Respondents that spent more time practicing and less time managing were associated with higher NV. For each additional veterinarian, practices had an average of 1.1 more registered veterinary technicians and 0.3 more secretarial/kennel staff. Those with a higher percent of their income derived from the beef industry had a lower NV. In addition, practices that utilized a business consultant had a tendency ($p < 0.07$) to have higher NV (\pm Standard Error) (3.7 ± 0.5) compared to practices that did not use a consultant (2.6 ± 0.3). (Table 3.4) Lastly, practices with a clinic website had larger ($p < 0.01$) NV (3.8 ± 0.4) compared to practices without a website (2.1 ± 0.3). (Table 3.4)

3.3 Practice Size Determined by Average Gross Practice Income per Veterinarian (GPV)

The mean gross practice income per veterinarian (GPV) (SD) was \$333,351 (182,344) and ranged from \$121,600 to \$1,026,666 (Table 3.2). Several associations were identified between survey variables and GPV (Table 3.5). A positive association ($p < 0.01$) was found between GPI and GPV. Each additional associate added \$45,279 to the practice GPV. The percent of income derived from swine and beef both illustrated positive associations with GPV. The practice's self-defined main interest species was associated ($p < 0.03$) with GPV. Practices that indicated they focused on swine (\$612,400) or beef (\$421,737) had higher GPV compared to practices focusing on small animal (\$295,756) or dairy (\$283,253); yet equine practices (\$321,000) were not different than any of the other categories (Table 3.6). Practices indicating that they had a business manager had higher ($p < 0.01$) GPV (\$452,804) compared to those without a business manager (\$291,543). (Table 3.7) Charging the same product fees (\$284,924) and service fees

(\$305,926) for all clients was associated with lower GPIV compared to practices that varied product (\$384,150) and service fees for clients (\$416,512). (Table 3.7)

3.4 Practice Size Determined by Average Gross Practice Income (GPI)

Average (SD) five-year gross practice income (GPI) for the 54 practices surveyed was \$940,097 (754,839) (Table 3.2). Analysis revealed a significant positive association between GPI and NV ($p<0.01$). For each veterinarian a practice added, which increased the total number of veterinarians in the practice (NV), gross income increased by \$485,000. The amount of time survey participants spent practicing was positively associated ($p<0.02$) with GPI, while the amount of time spent managing was negatively associated ($p<0.02$) with GPI. The number of owners or partners in a practice, the number of associate veterinarians, the number of registered veterinary technicians, the number of lay help, time spent practicing on swine, and practice income derived from swine were all positively associated with GPI. (Table 3.8) Sending client newsletters, having a clinic website, and holding client meetings were also positively associated with GPI. In addition, practices that indicated they have a business manager independent of the practice owner or veterinarian and those that did not have the same product fee schedule for all clients also tended to have higher GPI. (Table 3.9)

3.5 Associations between Percent Growth in the Number of Veterinarians (NVG) and Practice Management Variables

The average percent growth in number of veterinarians over the five-year study period (NVG) ranged from -13.0% to 46.0% with a mean (SD) of 4.4% (10.6) (Table 3.2). The percent of time spent practicing and the percent of practice income derived from equine was negatively associated with NVG (Table 3.10) The percent growth in the number of veterinarians tended to be associated ($p<0.07$) with the self-defined species interest. Practices self-defined as small animal had higher NVG (\pm SE) ($10.9\% \pm 3.0\%$) compared to beef ($3.1\% \pm 2.3\%$) and equine ($-6.0\% \pm 5.0\%$) practices with dairy practices ($4.4\% \pm 2.3\%$) not being significantly different from any other type (Table 3.11). Participants who responded that they spoke on veterinary topics at local or regional

producer educational meetings had ($p<0.05$) lower NVG (\pm SE) ($2.5\% \pm 1.7\%$) compared to those who did not speak at continuing education meetings ($8.5\% \pm 2.5\%$). (Table 3.10)

3.6 Associations between Percent Growth in Average Gross Practice Income per Veterinarian (DVMG) and Practice Management Variables

The average percent growth in gross practice income per veterinarian (DVMG) for the study participants was 8.1% (11.2%) (Table 3.2). Practices that indicated they used a marketing plan had a higher ($p<0.02$) growth rate ($14.5\% \pm 3.1\%$) in DVMG than those that did not use a marketing plan ($6.3\% \pm 1.7\%$). A higher percent of practice income derived from beef was positively associated with DVMG ($p<0.03$).

3.7 Association between Percent Growth in Practice Gross Income (GRSG) and Practice Management Variables

The average (SD) percent growth in practice gross income (GRSG) for study participants was 8.5% (8.5) (Table 3.2). Practitioners who graduated more recently had higher GRSG ($p<0.01$). An increase in practice radius tended ($p<0.07$) to be positively associated with GRSG. The frequency that a practice reported adjusting prices tended ($p<0.08$) to be positively associated with GRSG. (Table 3.12) Adjusting prices semi-annually (9.3%) or annually (9.8%) was associated with higher GRSG compared to practices adjusting prices every 2 years (7.5%) (Table 3.13). Not having the same service fees for all clients tended ($p<0.08$) to have higher GRSG (11.1%) than those that had the same service fees for all clients (6.9%). The frequency that a practice reviews financial reports tended ($p<0.09$) to be associated with higher GRSG. Practices that reviewed financial reports monthly (10.3%) or daily (7.1%) were associated with higher ($p<0.05$) GRSG compared to those who reviewed annually (4.0%); while weekly review (1.5%) did not have a significantly different GRSG than the other categories (Table 3.14).

Table 3.1 Means and Standard Deviations of Selected Variables from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians (n=54).

<i>Question</i>	<i>Mean</i>	<i>Standard Deviation</i>
What is your current practice radius? (i.e. the one-way mileage accounting for trips to 95% of your farm income)	50 miles	44.5 miles
How many other food animal practices are located within a 30 mile radius of your clinic?	4.9	5.6
How many of each of the following positions do you have in the practice?		
Registered veterinary technicians	2.2	1.4
Lay help (secretarial, kennel, etc)	5.3	3.9
How many years have you been in this practice?	19.6	10.4
What percent of veterinarian time in the practice is spent doing the following:		
Practicing veterinary medicine	80.2%	13.2%
Managing the practice (inventory, personnel)	14.2%	9.4%
Other	5.7%	7.3%

Table 3.2 Means and Standard Deviations of Outcome Variables from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians (n=54).

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>
Number of Veterinarians (NV)	2.8	1.9
Gross Practice Income per Veterinarian (GPIV)	\$333,351	\$182,344
Gross Practice Income (GPI)	\$940,097	\$754,839
Percent Growth in Number of Veterinarians (NVG)	4.4%	10.6%
Percent Growth in Gross Practice Income per Veterinarian (DVMG)	8.1%	11.2%
Percent Growth in Practice Gross Income (GRSG)	8.5%	8.5%

Table 3.3 Associations between Estimated Five-Year Average Number of Veterinarians (NV) and Selected Variables¹ from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Question</i>	<i>Parameter Estimate</i>	<i>P-value²</i>
What percent of veterinarian time in the practice is spent doing the following:		
Practicing veterinary medicine	0.05	p<0.02
Managing the practice (inventory, personnel)	-0.06	p<0.03
How many of each of the following positions do you have in the practice?		
Registered veterinary technicians	1.1	p<0.00
Lay help (secretarial, kennel, etc)	0.3	p<0.00
What percent of practice gross income is derived from the following:		
Beef	-0.02	p<0.01
Has your practice used a business consultant in the last 5 years?		p<0.07
Does your clinic have a website?		p<0.01

¹Only listed variables significantly associated with the five-year average number of veterinarians (NV)

²This value represents the level of significance of association between variables based on bivariate comparison between the five-year average number of veterinarians (NV) and selected variable

Table 3.4 Estimated Five-Year Average Number of Veterinarians (NV) based on Responses to Survey Questions from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Response</i>	<i>Yes</i>	<i>No</i>	<i>P-value¹</i>
Has your practice used a business consultant in the last 5 years?	3.68	2.58	p<0.07
Does your clinic have a website?	3.78	2.11	p<0.01

¹This value represents the level of significance of association between variables based on bivariate comparison between the five-year average number of veterinarians (NV) and selected variables.

Table 3.5 Associations between Estimated Five-Year Average Gross Practice Income per Veterinarian (GPIV) and Selected Variables¹ from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Question</i>	<i>Parameter Estimate</i>	<i>P-value²</i>
How many of each of the following positions do you have in the practice?		
Veterinarian (associates)	\$45,279	p<0.00
What percent of practice gross income is derived from the following:		
Beef	\$1,872	p<0.04
Swine	\$5,671	p<0.00
Which of the following is your practice's primary area of interest:		
		p<0.03
Does your practice have a business manager (independent of the practice owner or veterinarian)?		p<0.00
Are product fee schedules the same for all clients in the practice?		p<0.05
Are service fee schedules the same for all clients in the practice?		p<0.05

¹Only includes variables significantly associated with the five-year average gross practice income per veterinarian (GPIV)

²This value represents the level of significance of association between variables based on bivariate comparison between the five-year average gross practice income per veterinarian (GPIV) and selected variables.

Table 3.6 Associations between Estimated Five-Year Average Gross Practice Income per Veterinarian (GPV) and Practice Interest Comparisons from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians

<i>Practice Interest</i>	<i>Level¹</i>		<i>Parameter Estimate</i>
Swine	A		\$612,400
Beef	A		\$421,737
Equine	A	B	\$321,000
Small animal/exotic		B	\$295,757
Dairy		B	\$283,253

¹Levels not connected by the same letter are significantly different (p< 0.05).

Table 3.7 Estimated Five-Year Average Gross Practice Income per Veterinarian (GPV) based on Responses to Survey Questions from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Response</i>	<i>Yes</i>	<i>No</i>	<i>P-value¹</i>
Does your practice have a business manager (independent of the practice owner or veterinarian)?	\$452,804.00	\$291,543	p<0.00
Are product fee schedules the same for all clients in the practice?	\$284,924	\$384,150	p<0.05
Are service fee schedules the same for all clients in the practice?	\$305,926	\$416,512	p<0.05

¹This value represents the level of significance of association between variables based on bivariate comparison between the five-year average gross practice income per veterinarian (GPV) and selected variables.

Table 3.8 Association between Estimated Five-Year Average Gross Practice Income (GPI) and Selected Variables¹ from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Question</i>	<i>Parameter Estimate</i>	<i>P-value²</i>
What percent of veterinarian time in the practice is spend doing the following:		
Practicing veterinary medicine	\$19,328	p<0.01
Managing the practice (inventory, personnel)	-\$25,636	p<0.02
How many of each of the following positions do you have in the practice?		
Veterinarians (owner/partners)	\$354,467	p<0.01
Veterinarians (associates)	\$252,939	p<0.01
Registered veterinary technicians	\$338,724	p<0.00
Lay help (secretarial, kennel, etc)	\$84,328	p<0.00
What percent of practice time is devoted to the following:		
Swine	\$16,356	p<0.06
What percent of practice gross income is derived from the following:		
Swine	\$16,041	p<0.03
Do you send out a client newsletter? (electronic or paper)		p<0.08
Does your clinic have a website?		p<0.00
Do you hold client educational meetings?		p<0.10
Does your practice have a business manager (independent of the practice owner or veterinarian)?		p<0.05

Are product fee schedules the same for all clients in the practice?

p<0.04

1Only variables significantly associated with the five-year average gross practice income (GPI).

2This value represents the level of significance of association between variables based on bivariate comparison between the five-year average gross practice income (GPI) and selected variables.

Table 3.9 Estimated Five-Year Average Gross Practice Income (GPI) based on Responses to Survey Questions from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Response</i>	<i>Yes</i>	<i>No</i>	<i>P-value¹</i>
Do you send out a client newsletter? (electronic or paper)	\$1,230,619	\$828,358	p<0.08
Does your clinic have a website?	\$1,267,590	\$697,118	p<0.00
Do you hold client educational meetings?	\$1,049,677	\$679,843	p<0.10
Does your practice have a business manager (independent of the practice owner or veterinarian)?	\$1,282,114	\$820,391	p<0.05
Are product fee schedules the same for all clients in the practice?	\$736,269	\$1,163,835	p<0.04

1This value represents the level of significance of association between variables based on bivariate comparison between the five-year average gross practice income (GPI) and selected variables.

Table 3.10 Associations between Estimated Five-Year Average Percent Growth in the Number of Veterinarians (NVG) and Selected Variables¹ from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Question</i>	<i>Parameter Estimate</i>	<i>P-value²</i>
What percent of practice time is devoted to the following:		
Equine	-0.2%	p<0.01
What percent of practice gross income is derived from the following:		
Equine	-0.2%	p<0.04
Which of the following is your practice's primary area of interest:		p<0.07
Do you speak on veterinary topics at local or regional producer educational meetings?		p<0.05

¹Only variables significantly associated with the five-year average percent growth in the number of veterinarians (NVG).

²This value represents the level of significance of association between variables based on bivariate comparison between the five-year average percent growth in the number of veterinarians (NVG) and selected variables.

Table 3.11 Association between Estimated Five-Year Average Percent Growth in the Number of Veterinarians (NVG) and Practice Interest Comparisons from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians

<i>Practice Interest</i>	<i>Level¹</i>		<i>Parameter Estimate</i>
Swine			0.0%
Beef	A		3.1%
Equine	A		-6.0%
Small animal/exotic		B	10.9%
Dairy	A	B	4.4%

¹Levels not connected by the same letter are significantly different (p<0.05).

Table 3.12 Association between Estimated Five-Year Average Percent Growth in Gross Practice Income (GRSG) and Selected Variables¹ from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Question</i>	<i>Parameter Estimate</i>	<i>P-value²</i>
What year did you graduate veterinary school?	0.4%	p<0.01
What is your current practice radius? (i.e. the one-way mileage accounting for trips to 95% of you farm income)	0.1%	p<0.07
How often do you adjust your pricing schedule?		p<0.07
How often do you review practice financial reports?		p<0.09
Are service fee schedules the same for all clients in the practice?		p<0.08

¹Only variables significantly associated with the five-year average percent growth in gross practice income (GRSG)

²This value represents the level of significance between the five-year average percent growth in gross practice income (GRSG) and selected variables

Table 3.13 Association between Estimated Five-Year Average Percent Growth in Gross Practice Income (GRSG) and a Survey Question about Price Adjustment Frequency from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

<i>Price Adjustment Frequency</i>	<i>Level¹</i>	<i>Parameter Estimate</i>
Annually	A	9.8%
Semi-annually	A	9.4%
Every 5 years	A B	0.7%
Every 2 years	B	0.5%

¹Levels not connected by the same letter are significantly different (p<0.05)

Table 3.14 Association between Estimated Five-Year Average Percent Growth in Gross Practice Income (GRSG) and a Survey Question about Frequency of Reviewing Financial Reports from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians

<i>Frequency of Reviewing Financial Reports</i>	<i>Level¹</i>		<i>Parameter Estimate</i>
Monthly	A		10.3%
Daily	A	B	7.1%
Annually	A	B	4.0%
Weekly		B	1.5%

¹Levels not connected by the same letter are significantly different (p<0.05)

Figure 3.1 Histogram of frequency of responses to a community size question (What is the community size where you practice?) from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians.

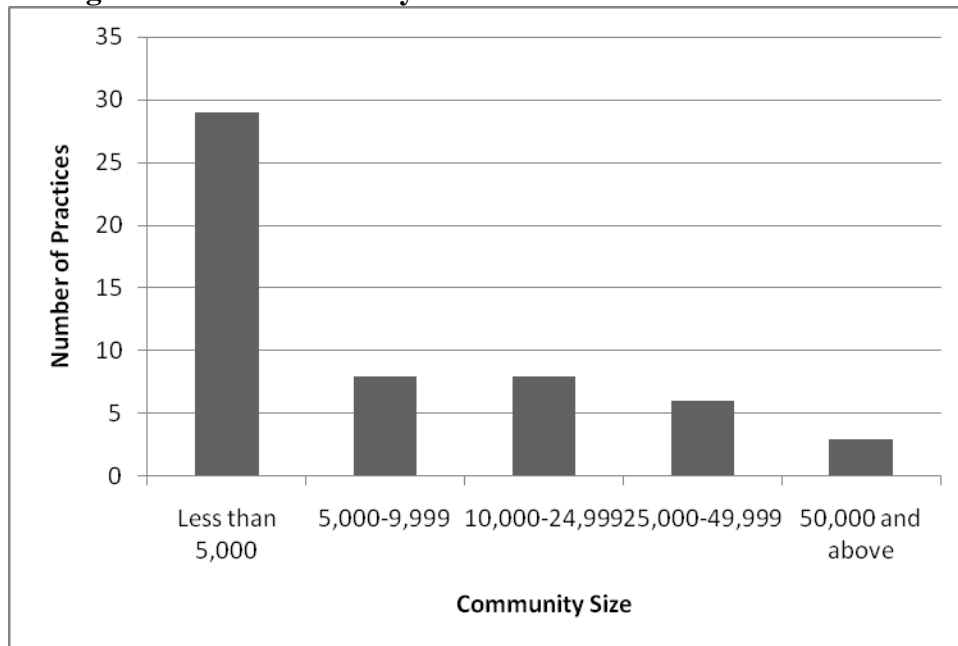
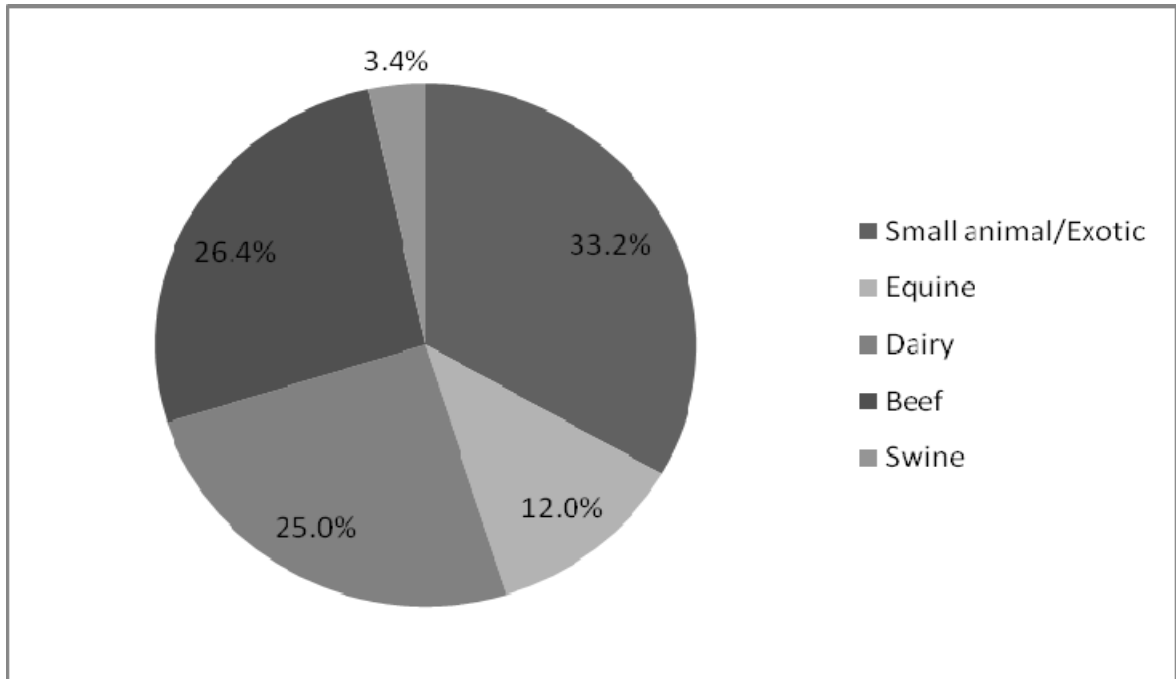


Figure 3.2 Chart illustrating practice mean percent time spent on each species (elicited from individual questions on each species, Questions 15-19) from a Practitioner-Based Best Management Practices Survey of Rural Mixed Animal Veterinarians (n=54).



CHAPTER IV: DISCUSSION

This study collected information on a variety of business practices and economic outcomes over a five-year period for mixed animal veterinary practices using a web-based survey (Appendix A). The collection of economic data provided a unique dataset for analysis of potential factors influencing practice size and practice growth. A number of associations were found between business management factors and both practice size and growth. These findings provide insight into the associations between specific management changes and the measured economic outcomes.

Survey respondents matched our target population of solo and multiple veterinarian mixed animal practices in relatively small communities. Therefore, findings from this research are applicable to practices with similar characteristics. Several authors have previously described a potential shortage in rural veterinarians (Syed, 2007; San Filippo, 2006; Hird et al., 2002) and research into economic drivers in these practices is important to enhance the understanding of factors associated with sustainable, growing practices in these communities.

Practice size during the study period was judged by the number of veterinarians (NV), gross practice income (GPI), and gross practice income per veterinarian (GPV). Although we are evaluating only gross income (as opposed to net), the variables collected are commonly used to describe practices and determine fair market value if the practice were to be sold. The 2006 AVMA Biennial Survey of US veterinarians gathered information regarding financial aspects of private veterinary practices (2007). This study reported that mixed animal practices had mean gross practice revenue (equivalent to our measure of gross practice income) of \$792,362 in 2003 and \$704,914 in 2005 and the mean number of veterinarians was 2.91 in 2003 and 2.30 in 2005. Results from our smaller survey are consistent with the AVMA study in regard to the mean number of veterinarians and mean gross income; we did note a tremendous range in both variables. The third variable (GPV) evaluated is a combination of NV and GPI, and it may provide insight into

the relative practice efficiency, or rather the distribution of gross income per veterinarian across practices. Using the means from the AVMA study, we can calculate mean gross practice revenue per veterinarian by dividing mean gross practice revenue by the mean number of veterinarians. This results in a mean gross practice revenue per veterinarian of \$272,289 in 2003 and \$306,484 in 2005. Again, our survey had similar findings, but the range in GPIV was generally large and further analyses were performed to evaluate potential associations between survey responses and outcome variables representing practice size.

Larger practices had several significant associations with demographic, client communication, and business management factors. As would be expected,, GPI increased with NV. That is, an increase in GPI is to be expected when the practice has an additional veterinarian, as they are likely a primary income generator. Our study indicated larger practices (NV) also had more employees (registered vet techs, lay help) and thus a higher capacity to generate GPI. Addition of veterinarians would not necessarily be expected to increase GPIV; however our study found that larger practices had higher GPIV. Higher income per veterinarian in larger practices could be related to increased practice efficiencies (economies of scale) associated with larger practices including the ability to provide adequate ancillary support staff that could also contribute to income generation. Conversely, practices could be larger because the area supports veterinarians at a high level (high GPIV), and results in long-term sustainability for practices of this size in the environment.

Practitioners had higher GPIV when more income was derived from practicing on swine or beef. This may be due to inherent structural and income generating differences between practices focusing on different species. The 2006 AVMA Biennial Survey reported a mean gross practice revenue of \$1,099,321 with a mean number of veterinarians of 2.99 for predominantly large animal veterinarians (which would include food animal species such as beef or swine, but does not include equine) (AVMA, 2007). These values equate to an average gross practice revenue per veterinarian of \$367,665. The survey also reported mean gross practice revenue for predominantly small animal veterinarians of

\$651,743 in 2005 with an average of 1.85 veterinarians (AVMA, 2007). Using these means we can calculate an average gross practice revenue per veterinarian of \$352,294. This indicates that based on previous studies, large animal practices have more income per veterinarian, confirming our study's results that practices deriving more income when practicing on swine or beef generate more dollars per veterinarian.

Specific business management factors were also associated with practice size. Communication with clients is evidently very important because of the positive associations between sending a client newsletter, having a clinic website, holding client meetings and GPI. All of these activities would make the client feel like a valued customer, thus they are more willing to bring a practice their business. Client satisfaction increases, which means business is going to increase and successful practices will increase in size. This parallels the AVMA-Pfizer study's findings that client relations was one of the factors that helped determine financial success regardless of the practice's species focus (Volk et al., 2005). However, it is important to note that client relations strategies such as these could have led practices to increasing in size (in terms of GPI), or that larger practices are more financially capable of having a website, sending a newsletter, and holding client meetings. In other words, while a positive relationship exists between practice size, as measured by GPI, and client communications, it cannot be ascertained as to what the causal relationship is with this analysis.

Gross practice income (GPI) increased when veterinarians spent less time managing the practice and more time practicing and this is likely because they were spending more time doing what generates income: practicing veterinary medicine. We found that practices having a business manager independent of the practice owner or veterinarian had higher GPI and GPIV. It is not surprising that this would improve these variables due to the nature of a business manager's role and responsibilities: to efficiently run the business while maximizing practice income. Analyzing financial reports and ensuring communication with clients are all actions the business manager might take in order to increase GPI. A business manager could improve GPIV by taking over the responsibility of managing the practice and allowing veterinarians more time to focus on practicing

medicine. More time practicing means an ability to increase client load, which means each veterinarian would generate more dollars. It is important to note that the reason some practices may have a business manager is because their size (in terms of NV or GPI) increased to the point that a business manager was needed and hired, or that the practice's size (in terms of NV or GPI) is the result of hiring a business manager.

In summary, we found that bigger practices (GPI) also increased GPIV, which means veterinarians in bigger practices tend to be more efficient in terms of gross income generation. This association tells us that either practices become larger through GPIV growth, or larger practices have inherent advantages (economy of scale) resulting in higher GPIV. This tells us that practice owners should consider the advantages and disadvantages of adding a veterinarian to their particular practice. A practice that is not able to financially or structurally support an additional veterinarian may not have an increase in GPIV, however, those with the financial means and sufficient support staff could see an improvement in GPIV. Communicating with clients is important to help clients feel as though their business is valued which results in increased GPI. In addition, a business manager was also associated with increased practice size.

In addition to evaluating the average practice size over a five-year period, this study also revealed a tremendous range in practice growth as gauged by NVG, DVMG, and GRSG. Growth in the number of veterinarians in the practice (NVG), and gross practice income (GRSG) are analogous to our initial measures of practice size. The growth in the amount of income dollars each veterinarian is generating (DVMG), is a combination of the previous two variables. Economic growth is important for any type of business in the economy due to the constant increase in costs required to operate a business (Burge, 2003). If the veterinary practice growth rate does not meet or exceed economic inflation rates, the business will not be able to financially survive. According to the Bureau of Labor Statistics, the average inflation rate between the years 2003 and 2007 was 3.03% (U.S. Bureau of Labor Statistics, accessed 2009). The average growth rate of gross practice income for our participants for the 2003-2007 study period was 8.5%, however there was a large range in average GRSG across practices in the study. This tells us that although some

practices grew (in terms of GRSG) at a rate necessary to maintain their financial position in the economy, not all practices sustained this growth rate. Differences in growth rates in the survey population were associated with demographic and business management factors.

Differences were noted in NVG depending on the species focus of the practice, but these differences may be associated with structural differences related to practice type rather than specific business decisions. Equine veterinarians often practice solo (Volk et al., 2005), and this study identified a negative association between time spent practicing on equine and percent of practice income from equine with NV growth. The growth in the number of veterinarians associated with practices who self-defined as small animal is not surprising given recent trends regarding the increasing demand for veterinary services, particularly in the area of small animals (Marshak, 2005). This may also help explain why food animal practices are not growing, and is evidenced by the fact that veterinary graduates are exiting food animal medicine within five years and moving to companion animal (Hird et al., 2002).

Communicating with clients was also important in terms of practice growth, as demonstrated by the positive association between sending a client newsletter, DVMG, and GRSG. A client newsletter could inform clients of new services, remind them of the practice's ability to meet their needs, and maintaining regular contact with clients encourages them to contact the practice. A newsletter could also attract new clients by raising awareness of the practice and defining what types of services the practice can provide to potential clients. All of these reasons could increase the growth rate of income generated from clients.

Practitioners, and/or their business managers, should make checking financial reports a priority. This was evidenced by the positive association between the frequency of reviewing financial reports and GRSG. Reviewing financial reports on a frequent basis is essential for practices to assess their financial performance. The AVMA-Pfizer study found that financial review was one of the eight factors that had the largest positive impact on income and that reviewing this information more frequently, such as monthly, was

associated with higher income (Volk et al., 2005). This study also found that frequency of financial review affected income, but in terms of income growth rather than absolute value. Practices that reviewed reports daily or monthly had higher GRSG compared to those practices reviewing annually. The reason for this could be that reviewing reports on a regular basis throughout the year provides timely and ample opportunity for financial adjustments to be made so that growth goals can be met. A higher GRSG rate was also associated with the frequency of adjusting prices and the business offering different levels of service fees for clients within the practice. If the prices of veterinary services are not able to keep up with the cost of the goods and services the practice requires to maintain itself as a business, income will be lost.

A marketing plan details the actions necessary to attract and retain customers; however, not all practices in our survey used this technique. The marketing plan variable was only associated with the DVMG outcome variable. The use of a marketing plan was associated with higher DVMG agrees with previous research indicating that the marketing of veterinary practices' services to potential and existing clients is essential for practice growth (Burge, 2003). The more clients each veterinarian is able to attract and retain, using the actions set forth in the marketing plan, the better the growth rate of the dollars each veterinarian generates.

To summarize, growth is important for veterinary practices to survive in the economy. Beef and equine veterinarians have lower NVG, most likely due to their tendencies to have one or few veterinarians per practice. Communicating with clients proved to be important because it keeps current clients informed and attracts new ones, which as a result effects growth in practice income via DVMG and GRSG. Reviewing financial reports on a regular basis throughout the year should become a priority for practices because of its tendency to increase GRSG. In addition, a marketing plan is an important tool for attracting and retaining clients, which in turn is associated with increased DVMG.

4.1 Limitations

While the results of this study provide helpful insights which could potentially benefit mixed animal veterinarians, it does have its limitations. The results found from this study should be interpreted with caution because they were derived from a small population of veterinarians; however, they still provide insight into relevant trends and relationships among business practices of veterinarians. A less than desired response rate resulted in a small sample size that forces results to be interpreted with caution. Though it is hoped that trends found mirror national development, a large portion of respondents came from Kansas and other Midwestern states. The sample may not accurately represent the entire population of veterinarians we were attempting to study. The goal of this study was to determine associations between two variables. When evaluating the tendencies between one dependent variable and one independent variable, there may be other independent variables that have an effect on this tendency that are not being included in the model. As a result of excluding relevant independent variables, parameter estimates may be too high or too low. In addition, we were unable to analyze net income and were forced to use gross income for many of our dependent variables. Net income would be a more accurate measure because it considers expenses of the practice.

CHAPTER V: CONCLUSIONS

Improving practicing veterinarians' income is important to increase the economic sustainability of veterinary practices and is especially pertinent in addressing the potential shortage of food animal veterinarians. This survey focused on business management practices associated with growth in mixed animal practices. Results indicated several significant findings regarding associations between practice size in terms of number of veterinarians (NV), gross practice income (GPI), and gross practice income per veterinarian (GPV) and growth in terms of percent growth in the number of veterinarians (NVG), percent growth in gross practice income (GRSG), and percent growth in gross practice income per veterinarian (DVMG). Consequently, it will be important for veterinarians to consider the benefits a business manager could have for their practice, as well as reviewing financial reports, improving client communications, frequently adjusting prices, and utilizing a marketing plan.

Future research is needed to consider the impacts of this study's findings on incorporating business education in the veterinary college curriculum. While many argue that graduating veterinarians should be capable of managing their own practice, our findings indicate that practices tend to do better financially by hiring a business manager. In addition, we found that larger practices tend to bring in more dollars per veterinarian. This could indicate there are some financial advantages for veterinary practices to consolidate and hire a business manager. As a result, more research needs to be done on the financial impact of business education in veterinary school to veterinary practices.

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<http://www.bls.gov/cpi/tables.htm> , Suite 3130 2 Massachusetts Avenue, NE Washington, DC 20212.
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APPENDIX A

Practitioner Based Best Business Management Practices Survey

Survey Description:

The objective of this survey is to identify business management strategies and profit centers associated with economic growth in mixed animal, rural veterinary practices with a significant beef component.

This survey is completely anonymous and no participant will be identified in any way.

Opening Instructions:

Please answer the following questions based on your practice's most current information. Also, please submit one survey per practice.

You will be able to answer most of the survey questions without searching for information, however, one of the important aspects of this survey is collecting economic data and we request that you have some economic records for the last few years available.

Page 1

Demographics

Question 1

In what state is your primary practice located?

Question 2

What year did you graduate from veterinary school?

Question 3

How many years have you been in this practice?

Characters Remaining:

Question 4

What is your role in the practice?

☐ Associate

☐ Owner/Partner

Question 5

This question pertains to the percent of practice's time that is spent. In other words, we're asking you to account for overall time spent by all practitioners.

What percent of veterinarian time in the practice is spent doing the following: (for questions 5-7, numbers should add up to 100%)

Practicing veterinary medicine

Characters Remaining:

Question 6

Managing the practice (inventory, personnel)

Characters Remaining:

Question 7

Other

Characters Remaining:

Question 8

What is the community size where you practice?

- ☐ Less than 5,000
- ☐ 5,000 - 9,999
- ☐ 10,000 - 24,999
- ☐ 25,000 - 49,999
- ☐ 50,000 and above

Question 9

What is your current practice radius (i.e. the one-way mileage accounting for trips to 95% of your farm income):

Characters Remaining:

Question 10

How many other food animal practices are located within a 30 mile radius of your clinic?

Characters Remaining:

Question 11

How many of each of the following positions do you have in the practice? (this applies to questions 11-14)

Veterinarians (owner/partners)

Characters Remaining:

Question 12

Veterinarians (associates)

Characters Remaining:

Question 13

Registered veterinary technicians

Characters Remaining:

Question 14

Lay help (secretarial, kennel, etc)

Characters Remaining:

Question 15

What percent of practice time is devoted to the following: (for questions 15-19)

Small animal/exotic

Characters Remaining:

Question 16

Equine

Characters Remaining:

Question 17

Beef

Characters Remaining:

Question 18

Dairy

Characters Remaining:

Question 19

Swine

Characters Remaining:

Question 20

What percent of practice gross income is derived from the following: (for questions 20-24)

Small animal/exotic

Characters Remaining:

Question 21

Equine

Characters Remaining:

Question 22

Beef

Characters Remaining:

Question 23

Dairy

Characters Remaining:

Question 24

Swine

Characters Remaining:

Question 25

Which of the following is your practice's primary area of interest (select one):

- ☐ Small animal/exotic
- ☐ Equine
- ☐ Beef
- ☐ Dairy
- ☐ Swine

Page 2

Economic practice characteristics

For questions 26-50, please provide as accurate information as possible. These questions are critical to the survey and without completion of at least 3 years of data, your figures may not be included in the final analysis.

Question 26

How many DVM's were in the practice for each of the following years: (for questions 26-30)

2007

Question 27

2006

Question 28

2005

Question 29

2004

Question 30

2003

Question 31

What was the gross income for the practice in each of the following years (dollars per year): (this applies to questions 31-35)

2007

Characters Remaining:

Question 32

2006

Characters Remaining:

Question 33

2005

Characters Remaining:

Question 34

2004

Characters Remaining:

Question 35

2003

Characters Remaining:

Question 36

How many active beef clients did your practice have for each of the following years: (this applies to questions 36-40)

2007

Characters Remaining:

Question 37

2006

Characters Remaining:

Question 38

2005

Characters Remaining:

Question 39

2004

Characters Remaining:

Question 40

2003

Characters Remaining:

Question 41

What was the gross income associated with beef cattle for each of the following years (dollars per year): (this applies to questions 41-45)

2007

Characters Remaining:

Question 42

2006

Characters Remaining:

Question 43

2005

Characters Remaining:

Question 44

2004

Characters Remaining:

Question 45

2003

Characters Remaining:

Question 46

What was the total value of product and supply sales to beef clients for each of the following years (dollars per year): (for questions 46-50)

2007

Characters Remaining:

Question 47

2006

Characters Remaining:

Question 48

2005

Characters Remaining:

Question 49

2004

Characters Remaining:

Question 50

2003

Characters Remaining:

Current beef practices

Question 51

Please answer the remaining questions to the best of your ability specifically referring to the beef portion of your practice.

Is there an area in which the practice focuses on (outside the normal scope of practice)? If yes, what is the specific area?

Characters Remaining:

Question 52

On average, how many hours of Continuing Education does each veterinarian in the practice attend each year?

- ☐ Less than 16
- ☐ 16-32
- ☐ 33-64
- ☐ 65-100
- ☐ Greater than 100

Question 53

What are the top three profit centers that generate net income in your cow-calf practice? Please list below.

Characters Remaining:

Question 54

How often do you adjust your pricing schedule?

- ☐ Semi-annually
- ☐ Annually
- ☐ Every 2 years
- ☐ Every 5 years

Question 55

How do you charge for most of your cattle work?

- ☐ Per head (procedural based)
- ☐ Per hour (time based)
- ☐ Even split between per head and per hour
- ☐ Retainer (annual or semi-annual fee)
- ☐ Other

Question 56

Does your practice have a written business plan updated in the past 5 years?

- ☐ Yes
- ☐ No

Question 57

Does your practice have a business manager (independent of the practice owner or veterinarian)?

- ☐ Yes
- ☐ No

Question 58

Has your practice used a practice business consultant in the last 5 years?

- ☐ Yes
- ☐ No

Question 59

Does your practice use a marketing plan to expand business services?

- ☐ Yes
☐ No

Question 60

Have you conducted a survey of your clients to determine what potential services they desire?

- ☐ Yes
☐ No

Question 61

How often do you review practice financial reports?

- ☐ Daily
☐ Weekly
☐ Monthly
☐ Annually

Question 62

Questions 62-78 will be related to both the percent of time (left column) and percent of clients (right column) spent on specific programs or services. Please select one answer in each column.

How often do you keep herd production records for your clients?

- | | |
|--|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of my time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of my time | <input type="checkbox"/> Greater than 60% of clients |

Question 63

How often do you work with producers on their herd financial records?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 64

How often do you work with clients on managing or marketing cull cows?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 65

How often do you assist clients with selection of their marketing plan for their feeder calves?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 66

How often do you assist clients by balancing rations for their herds?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 67

How often do you help producers evaluate feedstuff and mineral costs?

- | | |
|---|---|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of my clients |

Question 68

How often do you consult with producers regarding genetic decisions?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 69

How often do you help producers design reproductive programs (estrus synchronization, etc)?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 70

How often do you help producers design cattle working or processing facilities?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 71

How often do you work with producers on designing and implementing a preconditioning program for their calves?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 72

How often do you work with producers to design an immunization program for their cows?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 73

How often do you work with producers to design a treatment protocol for common diseases on their operation?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 74

How often do you help producers design a biosecurity program to prevent introduction of new diseases?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 75

How often do you work with producers on selecting and managing their replacement heifers?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 76

How often do you process cattle?

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 77

How often do you perform unscheduled individual animal treatments? (i.e. dystocias, prolapses, sick animal treatments)

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 78

How often do you perform routine reproductive services? (i.e. pregnancy testing, bull BSE's)

- | | |
|---|--|
| <input type="checkbox"/> None of the time | <input type="checkbox"/> None of my clients |
| <input type="checkbox"/> Less than 10% of the time | <input type="checkbox"/> Less than 10% of my clients |
| <input type="checkbox"/> 10-30% of the time | <input type="checkbox"/> 10-30% of my clients |
| <input type="checkbox"/> 30-60% of the time | <input type="checkbox"/> 30-60% of my clients |
| <input type="checkbox"/> Greater than 60% of the time | <input type="checkbox"/> Greater than 60% of clients |

Question 79

Do you work at a local auction market?

- ☐ Yes
- ☐ No

Question 80

If yes, please indicate how many days of the week:

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

Question 81

How frequently do you contact outside sources (extension, university, animal health companies) with questions regarding specific problems on client operations?

- ☐ None of the time
- ☐ Less than 10% of the time
- ☐ 10-30% of the time
- ☐ 30-60% of the time
- ☐ Greater than 60% of the time

Question 82

Where do you see the 3 biggest growth areas in your beef veterinary practice (please list specific services)?

Characters Remaining:

Question 83

Do you speak on veterinary topics at local or regional producer educational meetings?

- ☐ Yes
☐ No

Question 84

Do you send out a client newsletter? (electronic or paper)

- ☐ Yes
☐ No

Question 85

Does your clinic have a website?

- ☐ Yes
☐ No

Question 86

Do you communicate with clients via e-mail?

- ☐ Yes
☐ No

Question 87

If yes, please estimate the frequency.

- ☐ None of the time
☐ Less than 10% of the time
☐ 10-30% of the time
☐ 30-60% of the time
☐ Greater than 60% of the time

Question 88

Do you hold client educational meetings?

- ☐ Yes
☐ No

Question 89

Are you a member of local or regional veterinary professional organizations?

- ☐ Yes
☐ No

Question 90

Are you a member of any of the following national organizations? (Please choose all that apply).

- ☐ Academy of Veterinary Consultants
☐ American Association of Bovine Practitioners
☐ American Veterinary Medical Association
☐ Society of Theriogenology

Question 91

Do you feel you are an expert in and/or feel comfortable doing the following? (If yes, please check the box. If no, please leave blank. Check all that apply.)

- ☐ Interpreting EPDs and helping your clients
☐ Designing an estrus synchronization program for your clients
☐ Discussing a disease testing and eradication program
☐ Discussing grazing and pasture management for your geographic location
☐ Selecting a marketing avenue for feeder calves
☐ Designing an optimum health program for feeder calves
☐ Interpreting feedlot and carcass performance data
☐ Helping a producer determine their cost of production
☐ Designing a least cost ration for winter feeding of cows
☐ Designing a least cost ration for feeding calves

Question 92

How do you feel about the future economic viability of rural food animal practice?

- ☐ Optimistic
☐ Neutral
☐ Pessimistic

Question 93

Are there outside circumstances beyond your control that impacted practice income in the past five years? (example: regional drought, large client went out of business, etc) If yes, please describe in the comments box below.

- ☐ Yes
☐ No

Further comments about your response:

Question 94

Are product fee schedules the same for all clients in the practice?

- ☐ Yes
☐ No

Question 95

Are service fee schedules the same for all clients in the practice?

- ☐ Yes
☐ No

Question 96

Please provide any additional comments regarding the growth of your food animal practice.

Characters Remaining: